

Project rapportage.

Regeling Bijzondere Uitkering Natuur voor Bonaire, Sint Eustatius en Saba (2013 – 2019)

Algemeen

Project titel	Bonaire Caves & Karst Nature Reserve
Indiener	WILDCONSCIENCE BV
Projectbudget	USD 133,000.00
Startdatum	March 16th, 2018 (first batch of funds received)
Einddatum	September 30th, 2019
Contactpersoon (naam/email/tel.)	Fernando Simal fernando.simal@wildconscience.com Tlf. +599 701-3400

Inhoud/resultaten

Inhoud en doel project (samenvatting)	<p>The Openbaar Lichaam Bonaire, virtually all nature organizations, private companies and most individuals on Bonaire recognize caves as important features in the landscape and are aware of one or several of their values. Attempts to implement proper protection and management have been conducted with different degrees of success in the past. However, a financially sustainable and efficient management system has not been proposed yet and there is no indication of any significant efforts toward these goals currently ongoing. Successful conservation of caves on Bonaire can only be achieved through the integration of multiple disciplines, institutions and people, organized by means of a strategic plan.</p> <p>Currently, the ecological, scientific, recreational, cultural and touristic values contained in caves are threatened by uncontrolled activities, both of legal and illegal character. There is virtually a complete lack of management and supervision of the activities happening in the Bonaire caves today. Illegal dumping of solid and liquid waste, uncontrolled visits and “off the record” exploration and documentation efforts by different personal initiatives are a few examples that illustrate this situation. Most importantly, despite their ecological importance, bat populations on Bonaire are threatened by uncontrolled visits to caves that they use as maternity chambers.</p> <p>Overall Objective To create the Bonaire Caves and Karst Nature Reserve in order to provide optimum protection and management for the natural, cultural, recreational and scientific values contained in the Bonaire Cave System by September 2019.</p>
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	<p>Project purpose</p> <ul style="list-style-type: none"> ▪ To protect, conserve and restore (if applicable) the natural, cultural, historic, esthetic, recreational and scientific values contained in the cave systems of Bonaire, including, but not limited to, the native flora and fauna, the speleological formations and the ancient inscriptions for future generations, ▪ To restore the native vegetation of Bonaire, ▪ To ensure viable population of 5 keystone species for the island and their ecological interactions, ▪ To ensure that the residents of, and visitors to Bonaire receive quality education and information about the ecological importance and protection of caves and the values contained in them, ▪ To promote and ensure that the resources contained in this cave system are used in a sustainable manner ▪ To ensure that human safety is given priority during all cave-related activities.
<p>Beschrijving verloop project (incl, toelichting op wijzigingen/aanpassingen)</p>	<ul style="list-style-type: none"> - Despite of its approval in time, this 2-year project received the first batch of funds only 19 months away from the deadline, making impossible 2 years of activities. The most affected activity was the 2-year cycle planned for collecting data at the bat maternity cave at Bakuna. As a consequence, we increased sampling frequency to monthly for year 1 (March 2018-Feb. 2019) and for year 2 (April 2019-Feb. 2020), we will conduct sampling sessions every two months. Some of these sessions will fall outside the project timeframe and will be supported by CARIBSS and other volunteers. In other words, some of these sessions will take place after the project deadline is past, namely October 2019, December 2019 and February 2020. Nevertheless, the goals were successfully achieved and we learned the cave-use dynamics of all the bat species using this cave as a maternity. - The Bonaire Caves & Karst Tour Guide Group (BCKTG), a group formed during the Tour Guide Course and the main stake holder of the Bonaire Caves & Karst Park, requested to keep the rough natural look and feeling of the nature area as much as possible. As a consequence, adaptations to the original plan were made. These adaptations included: a) "hiding" the fence a few meters inside the existing vegetation instead of placing it on the edge of the road, b) minimizing both the amount and the visibility of signs informing about the park entrances and also the trail markers, c) using natural marks (limestone rocks) as trail markers instead of painting trees or rocks or build concrete markers in the trails, and, d) keeping the hiking trails natural (bare limestone) instead of using construction materials to make them easier to walk on. - Due to increase in price of materials and hand labor since the project was approved, a smaller area than initially planned was fenced. Yet, all the caves, sinkholes and the best forest area of the park was fenced. However, kueba Orizjan (located on the other side of the main road) remains in need of fencing. Also, following the advice of the

	<p>contractor (BonBerde BV), who has ample experience on fencing areas for reforestation over limestone, one line of prickle wire was placed on top of the fence.</p> <ul style="list-style-type: none"> - Due to the estimated maximum carrying capacity of the cave park (based mainly on visitor's experience), CARIBSS will not offer another Bonaire Caves & Karst Tour Guide Course until it is proven by at least 1 year of park use by the existing 13 certified operators use that the maximum carrying capacity has not been yet reached. The use of the park by non-certified guides and individuals remains an issue, due to the lack of proper legislation and/or enforcement or current regulations (e.g. illegal dumping of trash). - An improved way to erect the physical barriers in the bat maternity chambers than the one described in the proposal was implemented. Instead of using regular iron bars (which require major anchoring and welding work and tend to rust) we drilled small holes in the cave walls and used a high-quality epoxy anchoring compound to secure stainless steel eyehooks on these walls. To these eyehooks we looped 5mm stainless steel cable using stainless steel crimpers. After installation, we covered them with insulation foam to cushion potential crashes of bats into the new structure. Additionally, because the installation of physical barriers at bat caves are a topic that bat biologists are still learning from, data on bat behavior and presence/absence of colonies is being collected in a scientific way previous, during and after the installations. This experiment will continue after the project finished and a scientific publication will be submitted when the project is finished.
<p>Geplande en gerealiseerde resultaten en activiteiten</p>	<p>All planned activities were successfully executed. Further, several non-planned activities very significant for the protection of bats and caves were achieved as well. For instance, high resolution maps of the caves inside the Cave & Karst Park, certified international recognition by experts of Klein Bonaire as an Area of Importance for Bat Conservation, 7 extra concrete signs were installed at the known bat maternities of the island, collection of over 150 bat fecal samples for analysis of contaminants, 20 truck-loads of trash removed from areas nearby to the park, a significant increment of personal and institutional memberships for CARIBSS and the formation of the Bonaire Caves & Karst Tour Guide Group (under the CARIBSS umbrella), a group committed to the sustainable use of the Bonaire Caves & Karst Park and the entire proposed nature reserve.</p>

Financiën

<p>Beschrijving financieel verloop project</p>	<p>To the date of delivering this report, WILDCONSCIENCE BV has received a total of USD 118,840.00 in 5 payments. Therefore, a balance of USD 14.160.00 is still pending for payment. This amount was advanced by WILDCONSCIENCE BV to the project.</p> <p>Virtually no adjustments were made to the budget (see attached file). WILDCONSCIENCE BV happily donated 161 hrs. to the project (not included in project management). This "excess" of working hours was expected but considered worth it for the preservation of bats and caves on the Island of Bonaire. Additionally, several volunteers (both local and visitors) donated time to the project</p>
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	helping with different tasks including trail making, sign installation, clean ups, etc.
Gespecificeerd overzicht gemaakte en betaalde kosten	Eventueel toelichting/opmerkingen. Tabellen in bijlage

Impact project en borging resultaten

1) What has the project brought about and how are the results guaranteed/ maintained?

Besides the numerous tangible results of this project (e.g. a hiking trails, cave maps, CARIBSS-certified cave tour guides, signs, 1.7 km of fence, data on reproduction year cycles at a new maternity cave, certifications of international recognition and five physical barriers installed at the most important bat maternities among others), the most important product of this project is the creation of a **conscious group of cave tour guides**. Known as the Bonaire Caves & Karst Tour Guides Group, and consisting of 13 CARIBSS-certified individuals, this group signed a commitment among themselves and expressed its willingness to make extra efforts in their finances and time to make the sustainable use of the Bonaire Caves & Karst Park a reality. To our knowledge, the group includes more than 90% of all the companies and people conducting cave tours on the island. The BCKTG group will be key to ensure that the results of this project are maintained. However, without the acknowledgment and support of the local authorities (mainly OLB and STINAPA Bonaire) in fields like policy, legislation, law enforcement and maintenance of existing infrastructure, it is likely that this group will fail in their goals and become inactive in mid-term future (2-4 yrs.). Therefore, we encourage local authorities to meet regularly with this group in order to assess the status and needs of the Bonaire Caves & Karst Park to find solutions to future potential undesirable situations.

2) To what extent are there plans to use the results as a basis for further activities and / or project development?

As expressed in Section 2 of the approved project proposal, the activities reported in this document are Phase I of the Bonaire Caves & Karst Nature Reserve project. Phase II includes passing the necessary legislation to implement the nature reserve and ensure the conservation of the flora and fauna species that inhabit these areas. Chiefly, achieving financial sustainability of the area is key for its future maintenance and management. We strongly suggest to look into this as soon as possible. Further, there are well-defined and written plans for further activities, like the CARIBSS Strategic Plan 2018-2022 (available online). These plans are well justified by top international and national experts on nature conservation. For instance, the University of Wageningen report "State of Nature in the Dutch Caribbean, 2017" clearly states the unfavorable situation for our bats and caves, acknowledges CARIBSS activities and proposes activities that match the ones in our strategic plan. Likewise, our plans to conduct scientific research on bat population estimates and trends are indicated by IUCN as the main research needed for these species included in their well-known Red List. Finally, most of these areas were already designated by law for nature protection during 2010, when the R.O.B. was implemented.

3) What would be needed to achieve this?

For the implementation of the Bonaire Caves & Karst Nature Reserve, the political will of local decision makers is key. In order to include this implementation on their agenda, lobbying from different sectors is essential, being the most important ones the Dutch Government, universities and research institutions, nature-funding organizations (e.g. WWF, DierenLot and Postcode Loterij), local nature organizations and, last but not least, the local tourism sector guided by the TCB office.

For conducting the necessary research and monitoring of bat populations and other species protected by local legislation inhabiting caves and karst environments (e.g. candle cacti, barn owl, yellow-shouldered parrot and pearly-eyed thrasher) only funding is needed. The expertise is

locally available and research and monitoring for the species above mentioned is either irregularly ongoing due to lack of funds or a written plan already exists. CARIBSS will propose to implement a fee system, similar to the one of the national parks, for the use of these areas.

Lastly, for fencing the complete park, only funds are needed as well. Approximately USD 20,000.00

Annex 1. Pictures from the different projects results



MAP OF THE PARK



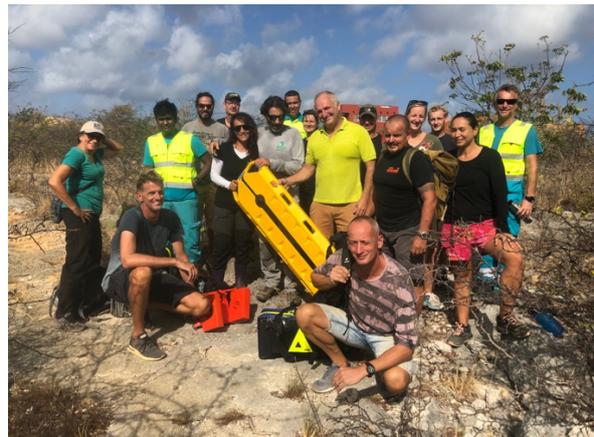
HIKING TRAILS



FENCE AND ONE OF THE THREE PARK ENTRANCES



CLEAN UPS AND PARKING SPACE



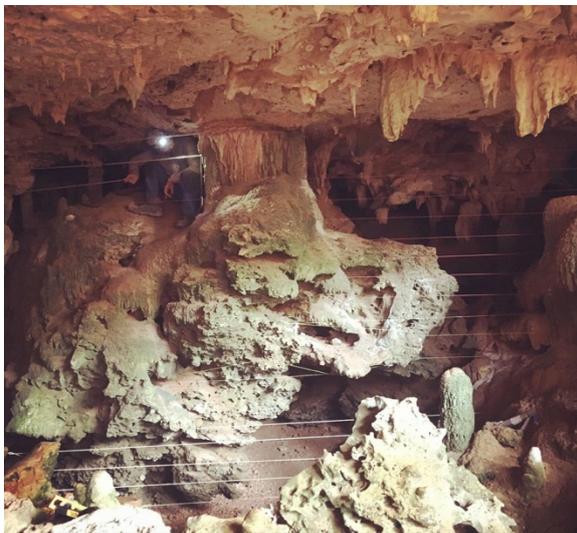
I CARIBSS CAVE TOUR GUIDE COURSE - CLASS AND FIELD EXERCISE WITH AMBULANCE CREW



CERTIFICATION CEREMONY



CLOSING OF BAT MATERNITY CHAMBERS – NO ENTRY SIGNS



CLOSING OF BAT MATERNITY CHAMBERS – ROPE TEST AND DETAIL OF STAINLESS STEEL CABLE

Life cycle of bats at Pos di Antoin

Female bats on Bonaire give birth to only one offspring per year after a long pregnancy. For some species, the entire island population could be roosting in the same cave. Disturbances during their reproduction period can cause high mortality of pups and lactating mothers, causing big decline in their population from which it can be very difficult to recover.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Funnel-eared bat <i>Natalus tumidirostris</i>				Yellow	Yellow	Yellow/Green	Green	Green	Green/Red	Red	Red	
Little brown bat <i>Myotis nesopolis</i>					Yellow	Yellow	Green	Green	Green/Red	Red	Red	Red
Long-tongued bat <i>Glossophaga longirostris</i>	Yellow	Yellow	Yellow/Green	Green	Green	Green	Green/Red	Red	Red	Red		Yellow



Mating



Pregnancy



Lactating



NOS TA RIBA DI NATURALESA



WILD CONSCIENCE



CARIBSS CARIBBEAN SPELEOLOGICAL SOCIETY



PPR



DierenLot

Design: Wildconscience B.V. - Artwork: Yago Rodriguez Perez. - Data source: Simal et al. 2015

CLOSING OF BAT MATERNITY CHAMBERS – EDUCATIONAL SIGN



CONTROL DIRECT VEHICLE ACCESS TO CAVE ENTRANCES AND PARKING AREAS


 La Red Latinoamericana y del Caribe para la Conservación de los Murciélagos certifica que reconoce a "Isla de Klein Bonaire" (Bonaire, Caribe Holandés), como un AICOM (Área de Importancia para la Conservación de los Murciélagos). En consecuencia, ha sido inscrita en nuestros registros con el código que se indica a continuación:

Código:	A-ABC-004
Fecha de creación:	09 de Diciembre de 2018

09 de Diciembre de 2018, Caracas, Venezuela


 Jafet M. Nassar
 Coordinador General


 Rubén M. Barquez
 Responsable AICOMs y SICOMs

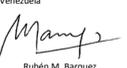
<http://www.recomlatinoamerica.net/>


 La Red Latinoamericana y del Caribe para la Conservación de los Murciélagos certifica que reconoce a "Pos di Antoin di Bakuna" (Bonaire, Caribe Holandés), como un SICOM (Sitio de Importancia para la Conservación de los Murciélagos). En consecuencia, ha sido inscrita en nuestros registros con el código que se indica a continuación:

Código:	S-ABC-002
Fecha de creación:	13 de Diciembre de 2018

13 de Diciembre de 2018, Caracas, Venezuela


 Jafet M. Nassar
 Coordinador General

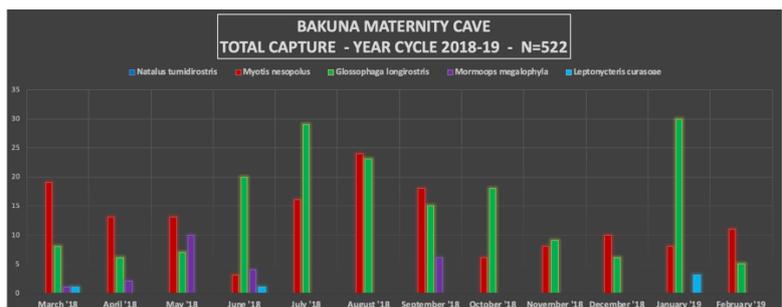
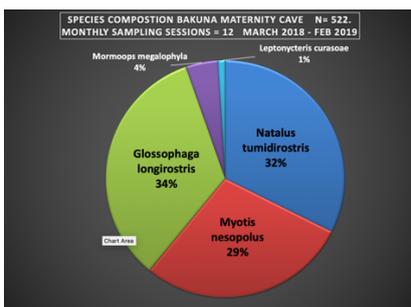
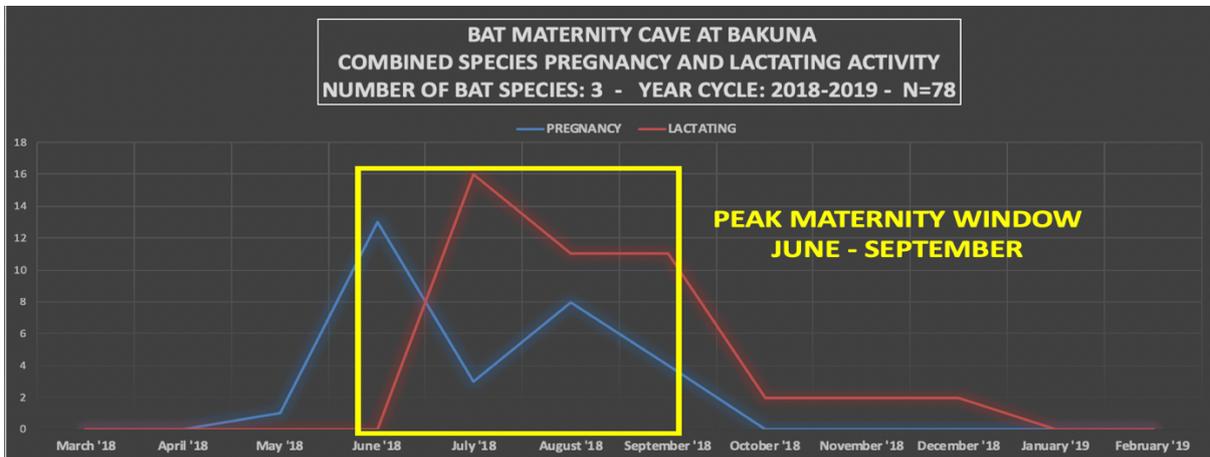

 Rubén M. Barquez
 Responsable AICOMs y SICOMs

<http://www.recomlatinoamerica.net/>

INTERNATIONAL RECOGNITION BY EXPERTS OF POS DI ANTOIN AND KLEIN BONAIRE AS A SITE AND AN AREA OF IMPORTANCE FOR BAT CONSERVATION (SICOM & AICOM)



CAPTURING BATS AND DATA COLLECTION ON THEIR REPRODUCTION CYCLE AT POS DI ANTOIN



VISUALIZATIONS OF THE DATA COLLECTED DURING YEAR CYCLE 1